

24
CLAIMS

I claim:

1 1. An apparatus for playing high definition content comprising:

2 (a) a media player for receiving the high definition content from a media
3 source, said high definition content contained in data packets and said
4 data packets contained in sectors;

5 (b) a content processor for processing said high definition content into
6 transport packets;

7 (c) a transport packet modulator for modulating said transport packets; and

8 (d) a controller.

1 2. The apparatus according to claim 1, wherein said data packets include
2 timestamps and comprises at least one of:

3 (a) watermark data;

4 (b) video data;

5 (c) audio data;

6 (d) executable data; and

7 (e) process data.

1 3. The apparatus according to claim 1, wherein preselected bocks of said data
2 packets are encrypted.

1 4. The apparatus according to claim 1, wherein said media source is an optical
2 disc.

1 5. The apparatus according to claim 1, wherein said sectors are DVD sectors,
2 and said content processor generates an ATSC transport stream.

1 6. The apparatus according to claim 2, wherein said watermark data includes at
2 least one of:

- 3 (a) a watermark identifier;
4 (b) an offset into a frame;
5 (c) a presentation time stamp;
6 (d) original data; and
7 (e) size data.

1 7. The apparatus according to claim 2, wherein said video data includes at least
2 one of:

- 3 (a) a start code ; and
4 (b) a watermark identifier.

1 8. The apparatus according to claim 1, wherein said content processor further
2 includes a trick mode generator.

- 1 9. The apparatus according to claim 8, wherein said trick mode generator can
2 create a slow motion effect by inserting empty predictive frames into a video
3 elementary stream between picture frames, wherein the rate of said slow
4 motion effect is determined by the quantity of predictive frames inserted.
- 1 10. The apparatus according to claim 8, wherein said trick mode processor can
2 create a pause effect by inserting into the video elementary stream a multitude
3 of predictive frames.
- 1 11. The apparatus according to claim 8, wherein said trick mode processor can
2 create a pause effect by iteratively inserting into the video elementary stream a
3 sequence comprising:
4 (a) an intra-coded picture frame; and
5 (b) a multitude of predictive frames.
- 1 12. The apparatus according to claim 8, wherein said trick mode processor can
2 create a fast forward playback effect by inserting forwardly sequenced Intra-
3 coded picture frames interspersed with empty predictive frames into the
4 transport packet stream, wherein the rate of said fast forward motion effect is
5 determined by the quantity of Intra-coded picture frames and predictive frames.
- 1 13. The apparatus according to claim 8, wherein said trick mode processor can
2 create a rewind playback effect by inserting reverse sequenced Intra-coded

picture frames interspersed with empty predictive frames into the transport packet stream, wherein the rate of said rewind playback effect is determined by the quantity of Intra-coded picture frames and predictive frames.

14. The apparatus according to claim 1, further including an HD-TV comprising:

- (a) a decrypter;
- (b) a demultiplexer;
- (c) a watermark buffer for receiving watermark data;
- (d) a video buffer for receiving video data; and
- (e) a watermark inserter for inserting watermarks into the video data, determined by the video data and watermark data.

15. A method for playing high definition content comprising:

- (a) receiving the high definition content from a media source, said high definition content contained in data packets and said data packets contained in sectors;
- (b) processing said high definition content into transport packets;
- (c) modulating said transport packets; and
- (d) outputting the modulated transport packets.

16. The method according to claim 15, wherein said step of receiving the high definition content from a media source comprises reading content from an optical disc.

1 17. The method according to claim 16, wherein said optical disc is a DVD and said
2 step of reading content from an optical disc further comprises reading DVD
3 sectors from said optical disc:

1 18. The method according to claim 15, wherein said step of processing said high
2 definition content into transport packets further comprises:

- 3 (a) buffering received watermark data;
4 (b) buffering received video data;
5 (c) buffering received audio data;
6 (d) inserting watermarks into the video data, determined by the video data
7 and watermark data; and
8 (e) generating transport packets.

1 19. The method according to claim 18, wherein said step inserting watermarks into
2 the video data, determined by the video data and watermark data further
3 comprises inserting a watermark into said video data by replacing a watermark
4 marker in said video data with a watermark determined by information in a
5 corresponding watermark data sector in said watermark data.

1 20. The method according to claim 18, wherein said step inserting watermarks into
2 the video data, determined by the video data and watermark data further
3 includes inserting watermarks into specific locations in said video data

determined by frame offsets, and presentation time stamps in said watermark data.

21. The method according to claim 15, wherein said step of processing said high definition content into transport packets further includes generating a slow motion effect by inserting empty predictive frames into a video elementary stream between picture frames, wherein the rate of said slow motion effect is determined by the quantity of predictive frames inserted.

22. The method according to claim 15, wherein said step of processing said high definition content into transport packets further includes generating a pause effect by iteratively inserting into the video elementary stream a sequence comprising:

- (a) an Intra-coded picture frame; and
- (b) a multitude of predictive frames.

23. The method according to claim 15, wherein said step of processing said high definition content into transport packets further includes generating a fast forward playback effect by inserting forwardly sequenced Intra-coded picture frames interspersed with empty predictive frames into the transport packet stream, wherein the rate of said fast forward motion effect is determined by the quantity of Intra-coded picture frames and predictive frames.

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